WHAT IS CLAIMED IS:

1. A method for processing a packet, the packet including at least one frame and a preamble arrangement, the preamble arrangement including at least one preamble associated with at least one frame, the method comprising:

receiving a packet from a first network element included in a network path at a second network element included in the network path;

determining whether at least one error has arisen between a source of the network path and the second network element; and

inserting a first error count indication in the preamble arrangement which substantially accounts for the at least one error when it is determined that the error has arisen between the source of the network path and the second network element.

2. The method of claim 1 further including:

monitoring a bit interleaved parity associated with a previous packet using the second network element, wherein the bit-interleaved parity is stored in the preamble arrangement.

3. The method of claim 2 wherein the bit interleaved parity is calculated and stored in the preamble arrangement by the source.

4. The method of claim 1 wherein when the second network element is a source of a tandem connection within the network path, the method further including:

inserting a second error count indication in the preamble arrangement which substantially accounts for the at least one error when it is determined that the error has arisen between the source of the network path and the second network element; and

inserting at least one of a tandem connection remote error indication and a tandem connection remote defect indication in the preamble arrangement.

5. The method of claim 1 wherein when the second network element is a sink of a tandem connection within the network path, the method further including:

identifying a number of errors between a source of the tandem connection and the second network element; and

extracting at least one of a tandem connection remote error indication and a tandem connection remote defect indication from the preamble arrangement.

6. The method of claim 1 wherein when the second network element is a sink of the network path, the method further including:

identifying a number of errors between the first network element and the second network element; and

extracting at least one of a full path remote error indication and a full path remote defect indication from the preamble arrangement.

7. The method of claim 1 wherein the preamble arrangement further includes:

a trail trace identifier; and

bits associated with performance monitoring information.

8. The method of claim 7 wherein the performance monitoring information includes one of a K1 byte, a K2 byte, and a K3 byte.

9. The method of claim 1 wherein the source of the network path is the first network element.

10. The method of claim 1 wherein the packet is an Ethernet packet.

11. A network element suitable for processing a packet, the packet including at least one frame and a preamble arrangement, the preamble arrangement including at least one preamble associated with at least one frame, the network element comprising:

means for receiving a packet from a first node included in a network path;

means for determining whether at least one error has arisen between a source of the network path and the network element; and

means for inserting a first error count indication in the preamble arrangement which substantially accounts for the at least one error when it is determined that the error has arisen between the source of the network path and the second network element.

12. The network element of claim 11 further including:

means for monitoring a bit interleaved parity associated with a previous packet, wherein the bit-interleaved parity is stored in the preamble arrangement.

13. The network element of claim 12 wherein the bit interleaved parity is calculated and stored in the preamble arrangement by the source.

14. The network element of claim 11 wherein when network element is a source of a tandem connection within the network path, the network element further includes:

means for inserting a second error count indication in the preamble arrangement which substantially accounts for the at least one error when it is determined that the error has arisen between the source of the network path and the network element; and

means for inserting at least one of a tandem connection remote error indication and a tandem connection remote defect indication in the preamble arrangement.

15. The network element of claim 11 wherein when the network element is a sink of a tandem connection within the network path, the network element further includes:

means for identifying a number of errors between a source of the tandem connection and the network element; and

means for extracting at least one of a tandem connection remote error indication and a tandem connection remote defect indication from the preamble arrangement.

16. The network element of claim 11 wherein when the network element is a sink of the network path, the network element further includes:

means for identifying a number of errors between the first node and the network element; and

means for extracting at least one of a full path remote error indication and a full path remote defect indication from the preamble arrangement.

17. The network element of claim 11 wherein the preamble arrangement further includes:

a trail trace identifier; and

bits associated with performance monitoring information.

18. The network element of claim 11 wherein the packet is an Ethernet packet.

19. A network element suitable for processing a packet, the packet including at least one frame and a preamble arrangement, the preamble arrangement including at least one preamble associated with at least one frame, the network element comprising:

code devices that cause a packet to be received from a first node included in a network path;

code devices that cause a determination of whether at least one error has arisen between a source of the network path and the network element; and

code devices that cause a first error count indication to be inserted in the preamble arrangement which substantially accounts for the at least one error when it is determined that the error has arisen between the source of the network path and the second network element.

20. The network element of claim 19 further including:

code devices that cause a bit interleaved parity associated with a previous packet to be monitored, wherein the bit-interleaved parity is stored in the preamble arrangement.

21. The network element of claim 20 wherein the bit interleaved parity is calculated and stored in the preamble arrangement by the source.

22. The network element of claim 19 wherein when network element is a source of a tandem connection within the network path, the network element further includes:

code devices that cause a second error count indication to be inserted in the preamble arrangement which substantially accounts for the at least one error when it is determined that the error has arisen between the source of the network path and the network element; and

code devices that cause at least one of a tandem connection remote error indication and a tandem connection remote defect indication to be inserted in the preamble arrangement.

23. The network element of claim 19 wherein when the network element is a sink of a tandem connection within the network path, the network element further includes:

code devices that cause a number of errors between a source of the tandem connection and the network element to be identified; and

code devices that cause at least one of a tandem connection remote error indication and a tandem connection remote defect indication to be extracted from the preamble arrangement.

24. The network element of claim 19 wherein when the network element is a sink of the network path, the network element further includes:

code devices that cause a number of errors between the first node and the network element to be identified; and

code devices that cause at least one of a full path remote error indication and a full path remote defect indication to be extracted from the preamble arrangement.

25. The network element of claim 19 wherein the preamble arrangement further includes:

a trail trace identifier; and

bits associated with performance monitoring information.

26. The network element of claim 25 wherein the packet is an Ethernet packet.

27. A network element suitable for use in path within a network, the network element comprising:

a receiver, the receiver being arranged to receive an Ethernet packet having a preamble arrangement, the preamble arrangement including at least one preamble associated with a frame included in the Ethernet packet, the preamble arrangement being arranged to contain a bit interleaved parity code, at least one of a remote error indication and a remote defect indication, a trail trace identifier, an error count, and performance monitoring information; and

a processor, the processor being arranged to access the preamble arrangement to update the preamble arrangement.

28. The network element of claim 27 wherein the processor is arranged to determine a bit interleaved parity code.

29. The network element of claim 27 wherein the processor is arranged to monitor the bit interleaved parity code contained in the preamble arrangement, the processor further being arranged to detect at least one error in the path, and to store information relating to the at least one error in the path as an error count when the at least one error is detected in the path.

30. The network element of claim 27 wherein the processor is arranged to insert the at least one of the remote error indication and the remote defect indication in the preamble arrangement, the processor further being arranged to insert the trail trace identifier and the performance monitoring information in the preamble arrangement.

31. The network element of claim 27 wherein the preamble arrangement is further arranged to include information used for tandem connection monitoring.

32. The network element of claim 27 wherein the Ethernet packet is of a converged data link (CDL) protocol.

33. The network element of claim 32 wherein the preamble arrangement further includes operation, administration, and management information associated with the CDL protocol.